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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,290	08/19/2003	Jeremy Donaldson	10015085-7	4035

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HEWLETT-PACKARD COMPANY
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EXAMINER

ALANKO, ANITA KAREN

ART UNIT	PAPER NUMBER
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1765

DATE MAILED: 09/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/643,290

Applicant(s)

DONALDSON ET AL.

Examiner

Anita K. Alanko

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 6/20/05 election.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19, 21-25 and 27-29 is/are pending in the application.
- 4a) Of the above claim(s) 13 and 28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12, 14-19, 21-25, 27 and 29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Election/Restrictions

Applicant's election with traverse of Group I in the reply filed on 6/20/05 is acknowledged. The traversal is on the ground(s) that applicant should be given equity and fairness. This is not found persuasive because the inventions are assigned to multiple technology centers and classified in multiple classes. The search for the method is not required for the produce, and vice versa.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5, 7-12, 14-19, 21-25, 27 and 29 are rejected under 35 U.S.C. 102(e) as being anticipated by Milligan et al (US 6,555,480).

Milligan discloses a method comprising forming a plurality of slot portions and etching a trench to form a compound slot such that at least one reinforcement structure extends across the compound slot (Fig. 13, Fig.3, col.8, lines 25-39). Milligan also discloses to form slots and trenches (openings in 112, 120, or also Fig.6A and 7B) using masking 122,124 and etchant 140, a plurality of time (since high density of slots in given die, col.2, lines 19-20).

Claims 1-9, 11-12, 14-19, 21-25 are rejected under 35 U.S.C. 102(e) as being anticipated by Soik et al (US 6,745,469 B1).

Soik discloses a method comprising:

forming a plurality of slot portions 308 in a substrate 302 (Fig.14); and

etching a trench 310 (or the portions could be reversed, slot 310 and trench 308) in the substrate contiguous with the plurality of slot portions to form a compound slot such that at least one reinforcement structure (e.g., the sidewall projections in Fig.16-21 or material relief 322) extends across the compound slot (col.14, lines 38-42).

As to claim 2, Soik discloses to form a v-shaped profile (col.10, line 49).

As to claim 3, Soik discloses to form first and second sidewalls (354 or 352, chamfers, Fig.16) that are oriented at an angle of between 10 degrees and 80 degrees relative to the first surface 304.

As to claims 4-5, Soik discloses to form a plurality of slots or vias (Fig.11).

As to claims 6-7 and 12, Soik discloses to laser machine or etch (col.14, lines 38-42).

Broadly interpreted, grinding, water jet cutting or electrochemical machining is wet etching.

As to claim 8, the method of etching inherently requires masking in order to form the slot selectively in the surface of the substrate.

As to claim 9, the V-shaped profile is anisotropic.

As to claim 11, Soik discloses to retain material between slots (Fig. 11).

Further, as to claim 14, Soik discloses to form a reinforcement structure 322, 334 (Fig.14), which makes the substrate stronger.

As to claim 15, see claim 3. The chamfers comprise two angled walls.

As to claims 16-17, see the rejection of claims 4-5.

As to claim 18, the EDM of Soik is expected to be isotropic.

As to claim 19, selectively etching in Soik inherently requires positioning a material to control removal of substrate material.

As to claim 21, Soik discloses angled walls, (Figures 14, 21 and 22; e.g., 402 or sidewalls 308).

As to claim 22, Soik discloses angled walls, e.g. chamfers (Fig.16), and sidewalls of opening 308 (Fig. 14).

As to claim 23, see the rejection of claims 8 and 19.

As to claim 24, the method of Soik is not expected to increase the given dimensions.

As to claim 25, the method of Soik discloses to form portions that extend through less than a majority of the thickness (310 or 308).

As to claim 26, Soik discloses to form sidewalls at greater than 10 degrees and less than about 90 degrees (Fig.14).

Response to Amendment

The claims remain rejected over Milligan and Soik. The allowability of claim 20, now in claim 26, is withdrawn. Examiner misinterpreted the scope of the claim. The 112 rejection over claim 26 is withdrawn since the claim has been cancelled.

Applicant's arguments filed 2/24/05 have been fully considered but they are not persuasive. Applicant argues that the limitation of the reinforcement structure is not disclosed. However, broadly interpreted- a sidewall with a projection is a reinforcement structure as well.

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To the extent that applicant is arguing that the reinforcement structure cited in the claims is as depicted in Fig.6 (ref. Numeral 506), it is noted that this argument is not commensurate in scope with the claim language since the claims do not cite that the reinforcement structure extends across the compound slot to connect substrate material on opposite sides of the compound slot.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anita K. Alanko whose telephone number is 571-272-1458. The examiner can normally be reached on Monday-Thursday until 2:30 pm (Wednesday until 11:30).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on 571-272-1465. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Anita K. Alanko

Anita K Alanko
Primary Examiner
Art Unit 1765